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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/803,225
Filing Date: March 16, 2004
Appellant(s): MA ET AL.

Gary P Oakeson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 1, 2011 appealing from the Office action mailed March 28, 2011.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1, 3-6, 10-17, 19-22, and 26-41 are pending.

Claims 1, 3-6, 10-17, 19-22, and 26-41 are rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 2003/0169320	Tomotake et al.	9-2003
US 6,443,568	Askeland et al.	9-2002
US 6,412,935	Doumaux	7-2002
US 2002/0192003	Koike et al.	12-2002
US 6,450,632	Tsang et al.	9-2002
JP 2000-103044A	Nakamura et al.	4-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 10, 14, 16, 17, 20 , 22, 26, 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Askeland et al (US 6,443,568) and Nakamura et al. (JP 2000-103044 A).

Regarding claims 1 and 17, Tomotake teaches a system and method for printing durable ink-jet ink images, comprising:

a) offset media (1, Fig 1);

b) an aqueous ink-jet ink (pg 3, par [0048]) comprising latex particulates dispersed therein (pg 9, par [0128]) and including a pigment colorant (pg 3, par [0048; pg 5, par [0073]]), said ink-jet ink being configured to be ink-jetted onto the offset media (coated paper; pg 10, par [0138]);

d) a calendaring device (heat and pressure applying means; 4, Fig 1) configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon (pg 10; par [0141]), wherein the pressure is mechanical pressure applied at from 500psi to 3000 psi (pg 10; par [0142]).

Tomotake fails to teach c) a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink and wherein the heat to be applied is from 20°C to 90°C.

Askeland teaches a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink (column 3, lines 31-37 and 45-47). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method of Tomotake to include a fixer composition as taught by Askeland to produce more durable ink jet printed images which are less susceptible to smudging as stated in Askeland (column 3, lines 47-49).

The combination of Tomotake and Askeland fails to teach wherein the heat to be applied is from 20°C to 90°C. Nakamura teaches heat to be applied is from 20°C to 90°C (pg 6, par [0039]) in order to improve glossiness of the ink (pg 7, par [0051]). Tomotake teaches subjecting the offset media to application of heat and/or pressure for the purpose of improving glossiness (pg 10, par [0141]). It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the system and method taught by Tomotake and Askeland such that the calendaring device to apply

heat is from 20°C to 90°C in order to improve the glossiness of the ink as suggested by Nakamura (pg 7, par [0051]).

Regarding claims 4 and 20, Tomotake teaches wherein the latex particulates are dispersed in the ink-jet ink at from 0.1 wt% to 15 wt% (pg 9, par [0132]).

Regarding claims 10 and 26, Askeland teaches wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof (column 3, lines 31-37 and 45-47).

Regarding claims 14 and 27, Tomotake teaches wherein the latex particulates comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size (pg 9, par [0131]) and predominantly from 10,000 Mw to 2,000,000 Mw (It has been held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of anticipation of claimed material properties has been established (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Since it appears that the structure of Tomotake is at least substantially identical to the structure claimed, any recitation to the property of Mw is presumed inherent.).

Regarding claim 16, Tomotake teaches wherein the calendaring device includes a pair of rollers that are configured to apply pressure and heat to the offset media once the ink-jet ink is printed thereon (4, Fig 1).

Regarding claim 22, Tomotake teaches wherein the pigment colorant is present in the ink-jet ink at from 0.5 wt% to 10 wt% (pg 4, par [0094]).

Regarding claim 29, Tomotake teaches wherein the physical property is smoothness, wherein upon applying pressure, the printed image is modified from having a textured profile to a smoother profile (Tomotake teaches "improving glossiness." The definition of glossiness is having texture without roughness or smooth to the touch. pg 10, par [0141]).

Regarding claim 30, Tomotake teaches wherein the physical property is flow, wherein upon applying pressure, the printed image is temporarily modified from a more solid configuration to a more liquid configuration (Tomotake teaches "to fuse." The definition of fuse is to become united as if by melting together (pg 10; par [0141]).

3. Claims 3, 12, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al. (US 2003/0169320) in view of Askeland et al (US 6,443,568) and Nakamura et al. (JP 2000-103044 A) as applied to claims 1, 10, and 17 above, and further in view of Doumaux (US 6,412935).

Regarding claims 3 and 19, Tomotake as modified by Askeland and Nakamura teaches all the claimed elements except wherein the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt%. Doumaux teaches a crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt% (column 4, lines 22-24). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake and Askeland such that the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt% to provide

the appropriate pH balance to the fixer fluid as suggested by Doumaux (column 4, lines 3-5).

Regarding claim 12, Tomotake as modified by Askeland and Nakamura teaches wherein the crashing agent is a multivalent metal ion or ionic group (Askeland column 3, lines 31-37 and 45-47) but fails to explicitly teach is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof.

Doumaux teaches is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids (column 3, lines 65-67), chloride salts, and combinations thereof. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to select a crashing agent from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof to precipitate the ink-jet composition and prevent color bleeding.

Regarding claim 13 Tomotake as modified by Askeland and Nakamura teaches wherein the crashing agent is a multivalent metal ion or ionic group (Askeland column 3, lines 31-37 and 45-47) but fails to explicitly teach the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid,

nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

Doumaux teaches the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid,

caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof (column 4, lines 6-9).

It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to select a crashing agent from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid,

propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof to precipitate the ink-jet composition and prevent color bleeding.

4. Claims 5, 6, 15, 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Askeland et al (US 6,443,568) and Nakamura et al. (JP 2000-103044 A) as applied to claims 1 and 17 above, and further in view of Koike (US 2002/0192003).

Regarding claims 5 and 21, Tomotake as modified by Askeland and Nakamura teaches all the claimed elements except an overcoat composition including a liquid

vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink.

Koike teaches an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink (pg 6, par [0064]). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake, Askeland and Nakamura such that an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink to improve the physical strength of the image receiving layer as suggested by Koike (pg 6, par [0061]).

Regarding claim 6, Koike teaches wherein the latex particulates are present in the overcoat composition at from 0.1 wt% to 15 wt% (pg 6, par [0064]).

Regarding claims 15 and 28, Tomotake teaches wherein the latex particulates comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size (pg 9, par [0131]) and predominantly from 10,000 Mw to 2,000,000 Mw (It has been held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of anticipation of claimed material properties has been established (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Since it appears that the structure of Tomotake is at

least substantially identical to the structure claimed, any recitation to the property of Mw is presumed inherent.).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Askeland et al (US 6,443,568) and Nakamura et al. (JP 2000-103044 A) as applied to claim 10, and further in view of Tsang (US 6,450,632).

Regarding claim 11, Tomotake as modified by Askeland and Nakamura teaches all the claimed elements except explicitly wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquatemaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

Tsang teaches a fixer fluid with polyethyleneimines as the crashing agent (column 5, line 60). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake, Askeland and Nagata such that such that the fixer fluid of included polyethyleneimines as the crashing agent to precipitate the ink-jet composition and prevent color bleeding.

6. Claims 31 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Koike et al (US 2002/0192003) and Nakamura et al. (JP 2000-103044 A).

Regarding claim 31, Tomotake teaches a system and method for printing durable ink-jet ink images, comprising:

a) offset media (1, Fig 1);

b) an aqueous ink-jet ink (pg 3, par [0048]) comprising latex particulates dispersed therein (pg 9, par [0128]) and including a pigment colorant (pg 3, par [0048; pg 5, par [0073]]), said ink-jet ink being configured to be ink-jetted onto the offset media; and

d) a calendaring device configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon (4, Fig 1; pg 10, par [0141]), wherein the pressure applied at from 500 psi to 3000 psi (pg 10; par [0142]).

Tomotake fails to teach c) an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink, said latex particulates being present in the overcoat composition at from 0.1 wt% to 15 wt%; and, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi, and wherein the heat to be applied is from 20°C to 90°C.

Koike teaches an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink (pg 6, par [0064]) and wherein the latex

particulates are present in the overcoat composition at from 0.1 wt% to 15 wt% (Koike pg 6, par [0064]). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake such that an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink to improve the physical strength of the image receiving layer as suggested by Koike (pg 6, par [0061]).

The combination of Tomotake and Koike fails to teach wherein the heat to be applied is from 20°C to 90°C. Nakamura teaches heat to be applied is from 20°C to 90°C (pg 6, par [0039]) in order to improve glossiness of the ink (pg 7, par [0051]). Tomotake teaches subjecting the offset media to application of heat and/or pressure for the purpose of improving glossiness (pg 10, par [0141]). It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the system and method taught by Tomotake and Koike such that the calendaring device to apply heat is from 20°C to 90°C in order to improve the glossiness of the ink as suggested by Nakamura (pg 7, par [0051]).

Regarding claim 38, Tomotake teaches wherein the latex particulates are dispersed in the ink-jet ink at from 0.1 wt% to 15 wt% (pg 9, par [0132]).

Regarding claims 39 and 40, Tomotake teaches wherein the latex particulates comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size (pg 9, par [0131]) and predominantly from 10,000 Mw to 2,000,000 Mw (It has been held that where the claimed and prior art products are

identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of anticipation of claimed material properties has been established (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Since it appears that the structure of Tomotake is at least substantially identical to the structure claimed, any recitation to the property of Mw is presumed inherent.).

Regarding claim 41, Tomotake teaches wherein the calendaring device includes a pair of rollers that are configured to apply pressure and heat to the offset media once the ink-jet ink is printed thereon (4, Fig 1).

7. Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Koike et al (US 2002/0192003) and Nakamura et al. (JP 2000-103044 A) as applied to claim 31 above, and further in view of Askeland et al (US 6,443,568).

Regarding claim 32, Tomotake as modified by Koike and Nakamura teaches all the claimed elements except a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink.

Askeland teaches a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink (column 3, lines 31-37 and 45-47). It would have been obvious to one of ordinary skill in the art at

the time of invention to modify the system and method of Tomotake to include a fixer composition as taught by Askeland so produce more durable ink jet printed images which are less susceptible to smudging as stated in Askeland (column 3, lines 47-49).

Regarding claim 34, Askeland teaches wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof (column 3, lines 31-37 and 45-47).

8. Claims 33, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Koike et al (US 2002/0192003), Nakamura et al. (JP 2000-103044 A) and Askeland et al (US 6,443,568) as applied to claim 32 above, and further in view of Doumaux (US 6,412935).

Regarding claim 33, Tomotake as modified by Koike, Nakamura and Askeland teaches all the claimed elements except wherein the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt%. Doumaux teaches a crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt% (column 4, lines 22-24). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake, Koike, Nagata and Askeland such that the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt% to provide the appropriate pH balance to the fixer fluid as suggested by Doumaux (column 4, lines 3-5).

Regarding claim 36, Tomotake as modified by Koike, Nakamura and Askeland teaches wherein the crashing agent is a multivalent metal ion or ionic group (Askeland column 3, lines 31-37 and 45-47) but fails to explicitly teach the crashing agent is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof. Doumaux teaches is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids (column 3, lines 65-67), chloride salts, and combinations thereof. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to select a crashing agent from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof to precipitate the ink-jet composition and prevent color bleeding.

Regarding claim 37, Tomotake as modified by Koike, Nakamura and Askeland teaches wherein the crashing agent is a multivalent metal ion or ionic group (Askeland column 3, lines 31-37 and 45-47) but fails to explicitly teach the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid,

trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

Doumaux teaches the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic

acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof (column 4, lines 6-9).

It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to select a crashing agent from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric

acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p- bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5- sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α- alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof to precipitate the ink-jet composition and prevent color bleeding.

9. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotake et al (US 2003/0169320) in view of Koike et al (US 2002/0192003), Nakamura et al. (JP 2000-103044 A) and Askeland et al (US 6,443,568) as applied to claim 32 above, and further in view of Tsang (US 6,450,632).

Tomotake as modified by Koike, Nakamura and Askeland teaches all the claimed elements except explicitly wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines,

polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquatemaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

Tsang teaches a fixer fluid with polyethyleneimines as the crashing agent. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended (*In re Leshin*, 125 USPQ 416). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the system and method taught by Tomotake, Askeland and Nagata such that such that the fixer fluid of included polyethyleneimines as the crashing agent to precipitate the ink-jet composition and prevent color bleeding.

(10) Response to Argument

35 U.S.C. § 103(a) Rejection of claims 1, 4, 10, 14, 16-17, 20, 22, 26-27, and 29-30 : Tomotake in view of Askeland and Nakamura (Appeal Brief, page 13+)

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references of Tomotake and Askeland, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988),

In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

In this case, appellant argues the combination of aqueous inkjet ink, the use of fixer and the use of calendaring renders an unexpected result. Examiner respectfully disagrees. Tomotake teaches calendaring after the application of aqueous inkjet ink improves image glossiness and storability (pg 10, par [0141]). Examiner notes the claimed aqueous inkjet ink and the prior art ink are at least substantially the same. Askeland teaches applying fixer solution underneath aqueous inkjet ink improves ink color saturation, edge acuity and durability of inkjet printed images (column 1, lines 44-46). Therefore it appears that when fixer solution is applied underneath aqueous inkjet ink, as taught in Askeland, and then submitted to a calendaring process, as taught by Tomotake, the resultant product offers improved ink color saturation and edge acuity in addition to improved glossiness and enhanced storability by producing more durable inkjet images. Any decrease in glossiness due to the addition of a fixer solution seems to be inherently addressed with the calendaring process taught by Tomotake.

In response to appellant's argument regarding the combination of Tomotake, Askeland, and Nakamura examiner submits that Nakamura need not teach "printing a fixer to provide gloss" (Brief pg 15, lines 1-2) to be properly combinable. As discussed above Tomotake and Askeland teach the concept of fixer solution and calendaring to provide gloss. Both Tomotake and Nakamura suggest the application of heat and/or pressure to improve gloss. Further

Nakamura discloses a sufficient temperature range that overlaps the temperature range disclosed in Tomotake and the claimed temperature range for the purpose of improving gloss. Therefore it appears prior art references Tomotake and Nakamura provide a suggestion and motivation for applying heat from 20℃ to 90℃, specifically to improve glossiness. Thus the improvement of gloss with the application heat from 20℃ to 90℃ is also not considered an unexpected result.

In response to appellant's argument regarding claims 14 and 27, examiner shall more particular point out in prior art Tomotake applicable teachings. Regarding polymerized copolymer latex particles see pg 9, par [0128] (teaching at least styrene-butadiene copolymers). Regarding latex particle size see pg 9, par [0131] (teaching particle size range of 10 to 300nm). Regarding weight average molecular weight (Mw) appellant claims a large range of 10,000 – 2,000,000 Mw that would inherently encompass the latex particles characterized by the claimed copolymer and particle size.

35 U.S.C. § 103(a) Rejection of claims 3, 12, 13, and 19: Tomotake in view of Askeland and Nakamura and further in view of Doumaux (Appeal Brief, page 16+)

Examiners response to appellant's arguments regarding the combination of Tomotake, Askeland and Nakamura discussed above are maintained here.

In response to applicant's argument that Doumaux is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with

which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Doumaux teaches underprinted fixer solution to improve optical density (color saturation) of pigment and dye based inks on plain paper (column 2, lines 52-60). Similarly Askeland teaches underprinted fixer solution to improve color saturation. Appellant's reason for including fixer solution is improved durability and waterfastness. Examiner submits improved color saturation and improved durability and waterfastness are within the same field of endeavor. Therefore the ordinary artisan would find the simple substitution of one fixer solution for another fixer solution reasonable. Thus the combination of Tomotake, Askeland, Nakamura and Doumaux is valid.

35 U.S.C. § 103(a) Rejection of claims 5, 6, 15, 21, and 28: Tomotake in view of Askeland and Nakamura and further in view of Koike (Appeal Brief, page 17+)

Examiners response to appellant's arguments regarding the combination of Tomotake, Askeland and Nakamura discussed above are maintained here.

In response to applicant's argument that ""onto" indicates direct printing of a solution onto another printed solution," appellant misinterprets the principle that claims are interpreted in the light of the specification. Although these elements are found as examples or embodiments in the specification, the specification provides no evidence to indicate that these limitations must be imparted into the claims to give meaning to disputed terms (Constant v Advanced Micro-Devices

Inc., 7 USPQ 2d 1064). Claims are interpreted according to the broadest reasonable interpretation. Here the broadest reasonable interpretation of the term "onto" includes indirect application. Examiner submits that claims 5, 6, 15, 21, and 28 as written do not require the overcoat composition be printed directly onto the printed image. Thus the addition of Koike to teach an overcoat composition is valid.

In response to appellant's argument regarding claims 15 and 28, examiner shall more particular point out in prior art Tomotake applicable teachings. Regarding polymerized copolymer latex particles see pg 9, par [0128] (teaching at least styrene-butadiene copolymers). Regarding latex particle size see pg 9, par [0131] (teaching particle size range of 10 to 300nm). Regarding weight average molecular weight (Mw) appellant claims a large range of 10,000 – 2,000,000 Mw that would inherently encompass the latex particles characterized by the claimed copolymer and particle size.

35 U.S.C. § 103(a) Rejection of claim 11: Tomotake in view of Askeland and Nakamura and further in view of Tsang (Appeal Brief, page 20)

Examiners response to appellant's arguments regarding the combination of Tomotake, Askeland and Nakamura discussed above are maintained here. Because the rejection under Tomotake, Askeland and Nakamura remains valid the addition of Tsang to teach a cationic polymer crashing agent is also valid.

35 U.S.C. § 103(a) Rejection of claims 31 and 38-41: Tomotake in view of Koike and Nakamura (Appeal Brief, page 20+)

In response to applicant's argument that ""onto" indicates direct printing of a solution onto another printed solution," appellant misinterprets the principle that claims are interpreted in the light of the specification. Although these elements are found as examples or embodiments in the specification, the specification provides no evidence to indicate that these limitations must be imparted into the claims to give meaning to disputed terms (Constant v Advanced Micro-Devices Inc., 7 USPQ 2d 1064). Claims are interpreted according to the broadest reasonable interpretation. Here the broadest reasonable interpretation of the term "onto" includes indirect application. Examiner submits that claims 5, 6, 15, 21, and 28 as written do not require the overcoat composition be printed directly onto the printed image. Thus the addition of Koike to teach an overcoat composition is valid.

In response to appellant's argument regarding the combination of Tomotake, Koike, and Nakamura examiner submits both Tomotake and Nakamura suggest the application of heat and/or pressure to improve gloss. Further Nakamura discloses a sufficient temperature range that overlaps the temperature range disclosed in Tomotake and the claimed temperature range for the purpose of improving gloss. Therefore it appears prior art references Tomotake and Nakamura provide a suggestion and motivation for applying heat from 20℃ to 90℃, specifically to improve glossiness. Thus the improvement of

gloss with the application heat from 20℃ to 90℃ is also not considered an unexpected result.

35 U.S.C. § 103(a) Rejection of claims 32 and 34: Tomotake in view of Koike and Nakamura and further in view of Askeland (Appeal Brief, page 21+)

Examiners response to appellant's arguments regarding the combination of Tomotake, Koike and Nakamura discussed above are maintained here.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references of Tomotake and Askeland, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

In this case, appellant argues the combination of aqueous inkjet ink, the use of fixer and the use of calendaring renders an unexpected result. Examiner respectfully disagrees. Tomotake teaches calendaring after the application of aqueous inkjet ink improves image glossiness and storability (pg 10, par [0141]). Examiner notes the claimed aqueous inkjet ink and the prior art ink are at least substantially the same. Askeland teaches applying fixer solution underneath aqueous inkjet ink improves ink color saturation, edge acuity and durability of

inkjet printed images (column 1, lines 44-46). Therefore it appears that when fixer solution is applied underneath aqueous inkjet ink, as taught in Askeland, and then submitted to a calendaring process, as taught by Tomotake, the resultant product offers improved ink color saturation and edge acuity in addition to improved glossiness and enhanced storability by producing more durable inkjet images. Any decrease in glossiness due to the addition of a fixer solution seems to be inherently addressed with the calendaring process taught by Tomotake.

35 U.S.C. § 103(a) Rejection of claims 33, 36, and 37: Tomotake in view of Koike, Nakamura and Askeland and further in view of Doumaux (Appeal Brief, page 22)

Examiners response to appellant's arguments regarding the combination of Tomotake, Koike, Nakamura, and Askeland discussed above are maintained here.

In response to applicant's argument that Doumaux is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Doumaux teaches underprinted fixer solution to improve optical density (color saturation) of pigment and dye based inks on plain paper (column 2, lines 52-60). Similarly Askeland teaches underprinted fixer solution to improve color saturation. Appellant's reason for

including fixer solution is improved durability and waterfastness. Examiner submits improved color saturation and improved durability and waterfastness are within the same field of endeavor. Therefore the ordinary artisan would find the simple substitution of one fixer solution for another fixer solution reasonable. Thus the combination of Tomotake, Askeland, Nakamura and Doumaux is valid.

35 U.S.C. § 103(a) Rejection of claim 35: Tomotake in view of Koike, Nakamura and Askeland and further in view of Tsang (Appeal Brief, page 23)

Examiners response to appellant's arguments regarding the combination of Tomotake, Koike and Nakamura discussed above are maintained here.

Because the rejection under Tomotake, Koike and Nakamura and Askeland remains valid the addition of Tsang to teach a cationic polymer crashing agent is also valid.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/SHEMA T FREEMAN/

Examiner, Art Unit 2854

Conferees:

/Judy Nguyen/
Supervisory Patent Examiner, Art Unit 2854

/Colleen Dunn/
TQAS, TC 2800